ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AIR QUALITY CONSTRUCTION PERMIT

Permit No. 310CP01 Date: - October 5, 2001

PETRO STAR INC.

NORTH POLE REFINERY

MODIFICATION PROJECT

The Department of Environmental Conservation, under the authority of AS 46.03, AS 46.14, and 18 AAC 50.315, issues an Air Quality Construction Permit to:

Owner/Operator: **Petro Star Inc.**
201 Arctic Slope Avenue, Suite 200
Anchorage, Alaska 99518

Facility Location: 1200 H & H Lane North Pole, AK 99705,
Longitude: 147° 22' 30"
Latitude: 64° 45' 0"

The Department authorizes Petro Star, Inc. to modify the facility to increase the firing rating of the crude heater and install a new 20,000 barrel crude storage tank, in accordance with the terms and conditions of this permit, and as described in the original permit application.

_____ _____

John F. Kuterbach, Manager Date
Air Permits Program

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PERMIT TERMS AND CONDITIONS

A. 18 AAC 50.340(i): Permit Continuity

1. Except as revised or rescinded herein or as superseded by an Air Quality Permit issued under AS 46.14.170, the Permittee shall comply with terms and conditions of Air Quality Control Permit to Operate No. 9531-AA006, issued November 29, 1995.

2. If permit terms and conditions listed in this permit conflict with those of Air Quality Control Permit to Operate No. 9531-AA006, Permittee shall comply with terms and conditions listed herein.

3. Exhibit A in this permit is a revision to Exhibit A, Source Inventory, of Air Quality Control Permit to Operate No. 9531-AA006, to incorporate modifications.

4. Exhibit B in this permit is a revision to Exhibit B, Air Contaminant Emission Limits, Standards, Fuel Specifications, and Operating Limits, of Air Quality Control Permit to Operate No. 9531-AA006, to incorporate modifications.

5. Exhibit C in this permit is a continuation and addendum to Exhibit E, Permit Application Documentation of Air Quality Control Permit to Operate No. 9531-AA006.

B. Standard Permit Conditions

6. The Permittee shall comply with each permit term and condition; noncompliance constitutes a violation of AS 46.14, 18 AAC 50, and the Clean Air Act and is grounds for:

    6.1 An enforcement action;

    6.2 Permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280; or

    6.3 Denial of an operating permit application

7. It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.

8. Each permit term or condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of the permit.

9. Compliance with the permit terms and conditions is considered to be compliance with those requirements that are:

9.1 Included and specifically identified in the permit; or

9.2 Determined in writing in the permit to be inapplicable.

10. The permit may be modified, reopened, revoked and reissued, or terminated for cause; a request by the Permittee for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

11. The permit does not convey any property rights of any sort, nor any exclusive privilege.

12. The Permittee shall allow an officer or employee of the Department, or an inspector authorized by the Department, upon presentation of credentials and at reasonable times, with the consent of the owner or operator, to:

12.1 Enter upon the premises where a source subject to the construction permit is located or where records required by the permit are kept;

12.2 Have access to and copy any records required by the permit;

12.3 Inspect any facilities, equipment, practices, or operations regulated by or referenced in the permit; and

12.4 Sample or monitor substances or parameters to assure compliance with the permit or other applicable requirements.

13. The Permittee shall furnish to the Department, within a reasonable time, any information the Department requests in writing to determine whether cause exists to modify, revoke and reissue, or terminate the permit, or to determine compliance with the permit; upon request, the Permittee shall furnish to the Department copies of records required to be kept; the Department, in its discretion, will require the Permittee to furnish copies of those records directly to the federal administrator.

C. Record Keeping, Reporting, and Testing Conditions

14. The Permittee shall certify all reports, compliance certifications, or other documents submitted to the Department under this permit as required by 18 AAC 50.205.

15. Except for as provided in Conditions 19 and 20, the permittee shall submit two copies of test plans, reports, certifications, and notices required under this permit and Exhibit D of Air Quality Control Permit to Operate No. 9531-AA006 to the Department’s Air Permits Program, 610 University Avenue, Fairbanks, AK 99709; telephone (907) 451-2139; facsimile (907) 451-2187.

16. The Permittee shall keep records of required monitoring data and support information for at least five years after the date of the collection; support information includes calibration and maintenance records, original strip-chart recordings for continuous monitoring instrumentation, and copies of reports required by this permit. The Permittee shall keep monitoring and compliance records as required by the Clean Air Act and applicable federal air quality regulations.

17. If requested by the Department, the Permittee shall conduct source tests of unit exhausts and report results as described in 18 AAC 50.220. The Permittee shall comply with all applicable federal requirements, and shall:

    17.1 Use the applicable test methods set out in 40 CFR Part 60, Appendix A, effective July 1, 1997, to ascertain compliance with applicable standards and permit requirements;

    17.2 Conduct source tests of unit exhausts and report the results as described. The Permittee may propose alternative test methods if it can be shown to be of equivalent accuracy, and will ensure compliance with the applicable standards or limits. Alternative test procedures must be approved by the Department prior to the test date.

        17.2.1 Nitrogen Oxides, NO_X, expressed as NO_2 (ppm, lb/MMBtu, and lb/hr): Reference Method 7E or Method 20, specified in 40 CFR 60, Appendix A;

        17.2.2 Oxygen, O_2 (percent): Reference Method 3 or 3A as specified in 40 CFR, Part 60, Appendix A;

        17.2.3 Stack Velocity and Volumetric Flow Rate: Reference Methods 1-4 as specified in 40 CFR, Part 60, Appendix A;

        17.2.4 Particulate Matter (grains/dscf, lb/MMBtu, and lb/hr): Reference Method 5 or Method 19 as specified in 40 CFR, Part 60, Appendix A;

        17.2.5 Sulfur Dioxide, SO_2 (ppm, lb/MMBtu, and lb/hr): Reference Method 6 or 6C, as specified in 40 CFR, Part 60, Appendix A; and

        17.2.6 Visible Emission Surveillance (percent): Reference Method 9 as specified in 40 CFR, Part 60, Appendix A.

    17.3 Except for visible emission surveillances;

        17.3.1 Submit to the Department, within 60 days after receiving a request, and at least 30 days before the scheduled date of the tests, a complete plan for conducting the source tests;

17.3.2 Give the Department written notice of the tests 10 days before each series; and

17.3.3 Within 45 days after completion of the set of tests, submit the results, to the extent practical, in the format set out in *Source Test Report Outline* in Volume III, Section IV.3, of the State Air Quality Control Plan, adopted by reference in 18 AAC 50.030(8).

18. The Permittee may seek Department approval of alternates to the monitoring, record keeping, and reporting requirements of this permit by submitting a written request to the Department. Until the Department approves an alternative monitoring, record keeping, or reporting requirement, the Permittee shall comply with the requirements listed in this permit.

19. The Permittee shall install, calibrate, conduct applicable continuous monitoring system performance tests listed in 40 CFR 60, Appendix B, effective July 1, 1997 and 40 CFR Part 61, Appendix B, effective December 19, 1996, to ascertain and certify test results; operate; and maintain air contaminant emissions and process monitoring equipment on Source No. 1. The Permittee shall submit monitoring equipment siting, operation, and maintenance plans and procedures for approval by the Department 90 days prior to installing a new or modified system.

    For continuous emission monitoring systems, the Permittee shall comply with each applicable monitoring system requirement, as listed in 40 CFR 60.13, 60.19, the applicable subpart as incorporated by reference in Condition 36 of this permit, 40 CFR 60, Appendix F, and the *EPA Quality Assurance Handbook For Air Pollution Measurements*, EPA/600 R-94/038b, effective July 1, 1997. The Permittee shall attach to the Facility Operating Report required by Exhibit D of Air Quality Control Permit to Operate No. 9531-AA006, a copy of each quarterly continuous emission monitoring system data assessment report for Quality Assurance Procedures conducted in accordance with 40 CFR 60, Appendix F.

20. Excess emission reporting--Report excess emissions that present a potential threat to human health or safety as soon as possible to the Department's Division of Spill Prevention and Response (SPAR). From 8:00 AM to 4:30 PM, report the event to SPAR by telephone at (907) 269-7500, or by facsimile at (907) 269-7648. Outside of this time, report the event to SPAR by telephone at (800) 478-9300. Please provide a complete description of the event and any assistance required from the Department.

21. Excess emission reporting--In addition to reporting under Condition 20:

    21.1 Give written notice of all excess emissions or deviations from permit requirements. Submit the notice as soon as possible and no later than two working days after the event commencement or discovery, to the Department's Air Permits Program, Attention—Excess Emission Report, 555 Cordova Street, Anchorage, AK 99501, by facsimile (907) 269-7508, or by e-mail to:

airreports@envircon.state.ak.us. Complete and submit the Excess Emission Report (EER) form provided in Exhibit D, or provide an alternative written notice with complete information for each element listed in the EER form. Except as provided for in Condition 21.2 of this permit, certify the written notice in accordance with 18 AAC 50.205.

21.2 The Permittee may certify the EER in accordance with 18 AAC 50.205 by attaching to the periodic Facility Operating Report required by Condition 14 of Air Quality Control Permit to Operate No. 9531-AA006, a copy of the EER with the certification statement and signature of the responsible official.

22. Keep a copy of this permit, the State Air Quality Control Regulations 18 AAC 50, and Alaska Statutes 46.14, at the permitted facility.

D. Operating Conditions

23. The Permittee is authorized to modify Source No. 1 and install Source No. 11 at the North Pole Refinery as follows:

Source	Description	Year Installed	Rating
1. Topping Plant, Crude heater	Cabin type, pipe still, direct fired furnace w/8 John Zinc PDA-16M Burners, Manufactured 1979	1985	50 MMBtu/hr
11. Crude Storage tank	Internal floating roof	2001	20,000 bbl

24. Permittee shall install, maintain, and operate, in accordance with manufacturer's procedures, fuel burning equipment, process equipment, emission control devices, testing equipment, and monitoring equipment to provide optimum control of air contaminant emissions during all operating periods.

25. Permittee may burn as fuel in the crude heater, Source No 1:

25.1 Up to 50 MMBu of fuel gas. The H_2S content of the fuel gas may not exceed 162 ppm by volume (230 mg/dscm);

25.2 Up to 40 MMBtu of a combination of Light Atmospheric Gas Oil (LAGO) and Light Straight Run (LSR). The remainder of the fuel input to the crude heater up to 50 MMBtu total firing rate may be supplied by fuel gas. The Sulfur content of the LAGO and LSR may not exceed 0.5% by weight and the H_2S content of the fuel gas may not exceed 162 ppm by volume (230 mg/dscm);

25.3 Permittee is allowed to burn #1 fuel oil for start-up.

26. Operate each source in compliance with the applicable emission standards specified by 18 AAC 50.040-070, by an applicable federal New Source Performance Standard (NSPS), or the requested emission limits.

27. Keep and follow a preventative maintenance program for each source listed in Exhibit A herein. Keep a copy of the procedures available at a location within the facility that is readily accessible to operators of the equipment and to authorized representatives of the Department.

E. 18 AAC 50.010: Ambient Air Quality Standards and Increments

28. Ambient air quality compliance for facility operation is demonstrated at the facility fence-line.

29. The Permittee shall not interfere with the attainment or maintenance of the Ambient Air Quality Standards listed in 18 AAC 50.010, and shall not cause or contribute to a violation of the maximum allowable ambient concentrations (the PSD increments) listed in 18 AAC 50.020 as follows:

29.1 Except as provided for in Condition 29.2, construct and operate the facility in accordance with this permit and application;

29.2 Notify the Department prior to making any change at the facility that deviates from the permit and application, such as changes in equipment size, configuration, or location.

29.2.1 For changes under 18 AAC 50.370(a), the Permittee may notify the Department under 18 AAC 50.370(b) and may implement the changes in accordance with 18 AAC 50.370(c);

29.2.2 For other changes:

29.2.2.1 Ask the Department if proposed change warrants additional ambient impact assessment modeling;

29.2.2.2 Within 60 days upon receiving written Department notice that modeling is warranted, prepare and submit to the Department an ambient impact assessment for the specified air contaminant and averaging period;

29.2.2.3 The Permittee shall not make the change until the Department concurs the change will not interfere with attainment or maintenance of ambient standards and increments.

F. Limits to Avoid Classification as a Major Facility under 18 AAC 50.300(c)(2)

This condition limits the emissions of SO_2 from the facility to prevent its classification as a PSD major facility.

30. Facility emissions:

30.1 Limit emissions to no more than 91 tons of SO_2 in any 12-consecutive month period;

30.2 Permittee is authorized to burn fuel gas, LAGO and light straight run (LSR) in Source No. 1, with no more than 59,443 bbls LAGO (corresponding to 40 MMBtu/hr) in any 12 consecutive month period (equivalent to 89.5 tons of SO_2):

30.3 Permittee is authorized to burn no more than 200 gallons of #1 fuel oil in Source 2 for any 12 consecutive month period (equivalent to 0.19 tons of SO_2).

30.4 Monitoring Requirements:

30.4.1 Measure and record the quantity of each fuel burned, in each fuel burning equipment, gallons of liquid fuels and scf of fuel gas. Calculate and record the monthly and 12-month rolling total fuel consumption for each type of fuel burned. In the calculation, do not include months before [permit issue date];

30.4.2 Calculate and record the SO_2 emissions for each calendar month based on the fuel consumption measured in Conditions 30.4.1 and fuel composition as follows:

30.4.2.1 For LAGO, LSR and #1 fuel oil, use the Sulfur content of each fuel and total fuel consumed;

30.4.2.2 For fuel gas, use H_2S content and total fuel consumed to estimate SO_2 emissions;

30.4.3 Calculate and record the 12-month rolling total SO_2 emissions by summing monthly emissions from each fuel burning equipment source using each fuel combination.

30.5 Reporting Requirements:

30.5.1 Report the 12-month rolling total SO_2 emissions from all fuel burning equipment at the North Pole refinery

30.5.2 Report the 12-month rolling total fuel consumption for the North Pole refinery; and

30.5.3 Report as excess emissions fuel consumption and SO_2 emissions greater than those specified in Conditions 30.1 and 30.2 of this permit.

G. 18 AAC 50.040: Federal Standards Adopted by Reference

31. Comply with the requirements of 40 CFR 60, New Source Performance Standards (NSPS) effective July 1, 1997, as they apply to affected facilities specified in Conditions 32 through 35.

    31.1 Submit a copy of all NSPS reporting to the U.S. EPA Region 10 and the Department, as required by the applicable Federal standards. The Permittee may attach periodic federal reporting to the Facility Operating Report required by Exhibit D of Permit to Operate No. 9531-AA006.

    31.2 Notify the Department of any U.S. Environmental Protection Agency- (EPA) granted waivers of NSPS emission standards, record keeping, monitoring, performance testing, or reporting requirements within 30 days after the Permittee receives a waiver.

32. In accordance with 40 CFR 60, Subpart A and 18 AAC 50.040, for each construction, modification, or reconstruction of affected facilities and sources regulated under 40 CFR 60 and 61:

    32.1 Notify the Department and EPA:

        32.1.1 No later than 30 days after construction/reconstruction commencement in accordance with 40 CFR 60.7(a)(1);

        32.1.2 Reserved;

        32.1.3 No more than 15 days after start-up in accordance with 40 CFR 60.7(a)(3);

        32.1.4 60 days prior or as soon as practicable before modifying facilities that would be subject to NSPS as set out in 40 CFR 60.7(a)(4);

        32.1.5 No less than 30 days prior to conducting a demonstration of continuous monitoring system performance as set out in 40 CFR 60.7(a)(5);

        32.1.6 No less than 30 days prior to the anticipated date for conducting opacity observations or using a continuous opacity monitoring system required by 60.11(e)(1), as set out in 40 CFR 60.7(a)(6) and (7); and

        32.1.7 No less than 60 days prior to commencement of reconstruction or replacement of a facility, as defined in 40 CFR 60, notify the Department and EPA with information as set out in 40 CFR 60.14(d).

    32.2 For affected facilities regulated under 40 CFR 60, maintain records of occurrence and duration of start-up, shut-down, or malfunction of an affected facility, control

equipment, or monitoring equipment as set out in 40 CFR 60.7(b). Submit continuous monitoring system performance reports as set out in 40 CFR 60.7(c) and (d). Maintain a file of measurements as set out in 40 CFR 60.7(e);

32.3 For affected facilities regulated under 40 CFR 60, 60 days after achieving maximum production rate, but not later than 180 days after initial start-up, and upon the EPA Administrator's request, conduct performance tests as follows:

32.3.1 Notify the Department and EPA at least 30 days in advance of any performance test and opacity observation as set out in 40 CFR 60.8(d), 60.11(e)(1), and Condition 17.

32.3.1.1 For Visible Determination of Smoke Emissions from Flares use Reference Method 22 as specified in 40 CFR, Part 60, Appendix A.

32.3.2 Conduct performance tests and data reduction as set out in 40 CFR 60.8(b) and (f);

32.3.3 Provide the Department copies of EPA administrator approvals for alternative performance testing;

32.3.4 Provide sampling ports and platform(s), safe access to platforms(s), utilities, and conduct testing as set out under 40 CFR 60.8(c)(and (e); and

32.3.5 Furnish the Department and EPA a copy of the performance test and opacity observations as set out in 40 CFR 60.8(a) and 60.11(e)(2)-(5).

32.4 At all times maintain and operate each affected facility including pollution control equipment, as set out in 40 CFR 60.11(d);

32.5 The Permittee is prohibited from concealing a violation of any applicable NSPS as set out in 40 CFR 60.12;

32.6 For continuous monitoring systems and devices required under NSPS:

32.6.1 Ensure all systems and devices are installed, calibrated, and operational as set out in 40 CFR 60.13(b) prior to conducting a performance test under 40 CFR 60.8;

32.6.2 Conduct a performance evaluation of continuous emission monitoring systems (CEMS) as set out in 40 CFR 60.13(c);

32.6.3 Conduct daily zero and span checks of CEMS as set out in 40 CFR 60.13(d);

32.6.4 Ensure all continuous monitoring systems meet the minimum frequency of operation requirements set out in 40 CFR 60.13(e), and are kept in continuous operation, except for system breakdowns, repairs, calibration checks, and zero/span adjustments;

32.6.5 Install continuous monitoring systems to obtain representative emission or process parameters, as set out in 40 CFR 60.13(f);

32.6.6 Reduce continuous monitoring system data as set out in 40 CFR 60.13(h); and

32.6.7 Provide the Department a copy of each EPA alternative monitoring approval or relative accuracy test audit approval issued under 40 CFR 60.13(i) or (j).

33. 40 CFR 60, Subpart J; Sources No. 1:

33.1 Applicability, designation of affected facility, and reconstruction. The provisions of this subpart are applicable to fuel gas combustion devices, including the crude heater and flares, except as exempted;

33.2 Permittee shall not burn in Source No. 1 fuel gas with a sulfur content greater than 230 mg/dscm as set out in 40 CFR 60.104(a)(1);

33.3 The sulfur dioxide monitoring level equivalent to the hydrogen sulfide standard under Condition 33.2 of this permit shall be 20 ppm, as set out in 40 CFR 60.105(a)(3)(ii);

33.4 Monitoring and record keeping:

33.4.1 Use a continuous emission monitor to monitor sulfur dioxide as set out in 40 CFR 60.105(a)(3), and Condition 19 of this permit, or an H_2S monitor as set out in 40 CFR 60.105(a)(4);

33.4.2 An oxygen monitor, to correct for excess air, will be included with the sulfur dioxide monitor as set out in 40 CFR 60.105(a)(3).

33.4.2.1 To determine compliance with the sulfur dioxide limit, correct SO_2 emission concentrations for zero percent excess air, as set out in 40 CFR 60.105.

33.4.3 Evaluate performance of SO_2 CEMS as using Performance Specification 2 in 40 CFR 60.13(c). Use Methods 6 and 3 to evaluate relative accuracy as set out in 40 CFR 60.105(a)(3)(iii); or

33.4.4 Ensure span value for H_2S monitoring is 425 mg/dscm;

33.4.5 Evaluate performance of H_2S continuous monitoring with Performance Specification 7 in 40 CFR 60, Appendix B. Use 40 CFR 60, Appendix A, Method 11, effective July 1, 1997, to evaluate relative accuracy as set out in 40 CFR 60.105(a)(4)(iii);

33.4.6 Report as excess emissions under Condition 20, 40 CFR 60 Subpart A, and 40 CFR 60.7(c), rolling 3-hour periods during which SO_2 exceeds 20 ppm, or alternatively, 3-hour rolling periods during which H_2S exceeds 230 mg/dscm.

33.5 Test methods and procedures, 40 CFR 60.8 and 60.106:

33.5.1 Determine compliance with H_2S standard using 40 CFR 60, Appendix A, Method 11 as set out in 40 CFR 60.106(e), and sample for the duration as set out in 60.106(e).

34. 40 CFR 60, Subpart Kb; Sources No. 5-11:

34.1 Applicability and designation of affected facility, 40 CFR 60.110b. Volatile organic liquid storage tanks greater than 40 cubic meters in volume (10,567 gallons or 252 bbls) for which construction, reconstruction, or modification commenced after July 23, 1984, are subject to this Subpart as listed in 40 CFR 60.110b(a).

34.2 Sources No. 10 and 11 shall be equipped with either one of the following:

34.2.1 A fixed roof with an internal floating roof conforming to requirements set out in 40 CFR 60.112b(a)(1)(i) through (ix);

34.2.2 An external floating roof conforming to requirements set out in 40 CFR 60.112b(a)(2)(i) through (iii); and

34.2.3 A closed vent system and control device conforming to requirements as set out in 40 CFR 60.112b(a)(3)(i) and (ii).

34.3 Sources No. 10 and 11 shall be tested by either one of the following methods:

34.3.1 For a fixed roof with an internal floating roof, Permittee shall test in accordance to 40 CFR 60.113b(a)(1) through (5).

34.3.2 For an external floating roof, Permittee shall test in accordance to 40 CFR 60.113b(b)(1) through (6).

34.3.3 For a closed vent system and control device, Permittee shall test in accordance to 40 CFR 60.113b(c)(1) and (2).

34.4 For Sources No. 10 and 11, maintain a record of the Volatile Organic Liquid stored, the period of storage, and the maximum true vapor pressure of that liquid during the respective storage period pursuant to 40 CFR 60.116b(c).

34.5 Monitoring of operations, 40 CFR 60.116b. Pursuant to 40 CFR 60.116b(a) and (b), keep readily accessible records showing the dimension of the storage vessels and an analysis showing the capacity of the storage vessel for each storage tank greater than or equal to 40 cubic meters (10,567 gallons). Keep these records on-site for the life of each tank.

35. 40 CFR 60, Subpart GGG; Source No. 1:

35.1 Applicability and delegation of authority, 40 CFR 60.590. In a petroleum refinery, an affected facility includes compressors and all equipment within a process unit;

35.2 Applicable requirements for pumps, compressors, pressure release mechanisms, sampling connection systems, and valves are found in 40 CFR 60.482-1 to 60.482-8, as referenced in 40 CFR 60.592, Standards;

35.3 Source No. 1--Affected facilities designated for no detectable emissions will not exceed 500 ppm VOC, as set out in 40 CFR 60.482-2(e), 40 CFR 60.482-4(a), 40 CFR 60.482-7(f);

35.4 A leak is a monitor reading of 10,000 ppm or greater, as set out in 40 CFR 60.482-2(b)(1), 40 CFR 60.482-7(c)(1), and 40 CFR 60.482-8(b);

35.5 Repair compressor, valve, pressure relief device, and connector damages no later than 15 calendar days after a leak is detected as set out in 40 CFR 60.482-3(g), 40 CFR 60.482-7(d) and (e), and 40 CFR 60. 482-8(a) and (b), except as provided in 40 CFR 60.482-9;

35.6 Within 5 calendar days after a pressure release, establish conditions of no detectable emissions, as set out in 40 CFR 60.482-4 and detected by Condition 35.9.1 of this permit;

35.7 Equip each sampling connection system with a closed purge system or closed vent system, as set out in 40 CFR 60.482-5;

35.8 Equip each open-ended valve or line with a cap, blind flange, plug, or second valve, as set out in 40 CFR 60.482-6;

35.9 Monitoring, record keeping and reporting:

35.9.1 Monitor affected facilities at Source No. 1 using Method 21 of

Appendix A, as set out in 40 CFR 60.485(b)(1);

35.9.2 Monitor pumps and valves in light liquid service monthly, and visually inspect pumps weekly to detect leaks as set out in 40 CFR 60. 482-2(a)(1) and (2), and 40 CFR 60.482-7(a),(b) and (c);

35.9.3 If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method, monitor within 5 days by the method specified in Condition 35.9.1 of this permit, the pumps and valves in heavy liquid service, pressure release devices in light liquid or heavy liquid service, and flanges and other connectors;

35.9.4 As set out in 40 CFR 60.486(b), when a leak is detected, attach to the leaking equipment, a weatherproof and readily visible identification, marked with the equipment identification number. Permittee may remove the identification on a valve after monitoring it for two successive months and detecting no leak. Permittee may remove the identification on equipment that is not a valve, after it has been repaired;

35.9.5 For each leak that is detected, maintain a log for 5 years from the date of detection, including information as set out in 40 CFR 60.486(c);

35.9.6 For equipment subject to 40 CFR 60.482-1 to 60.482-10, maintain a log containing the information found in 40 CFR 60.486(e) for 5 years;

35.9.7 Maintain in an accessible log, leak sensor design criteria, explanation of design criteria, and changes in design criteria as set out in 18 AAC 50.486(h).

35.9.8 Comply with reporting requirements as set out in 40 CFR 60.487.

35.9.8.1 Submit a semi-annual report to the Department beginning six months after the start-up date, as set out in 40 CFR 60.487. The semi-annual report should include the number of pumps, valves, and compressors in the facility, and the number of pumps, valves, and compressors where leaks were detected, as set out in 40 CFR 60.487(b) and (c).

H. 18 AAC 50.055: Industrial Processes and Fuel-Burning Equipment

36. The Permittee shall comply with 18 AAC 50.055(a)(1) for visible emissions, 18 AAC 50.055(b)(1) for particulate matter emissions, and 18 AAC 50.055(d)(3) for sulfur compound emissions as follows:

36.1 Visible emissions, excluding condensed water vapor, from an industrial process or fuel-burning equipment may not reduce visibility through the exhaust effluent by

greater than 20%, for a total of more than three minutes in any one hour.

36.2 Particulate matter emitted from an industrial process or fuel-burning equipment may not exceed, per cubic foot of exhaust gas correct to standard conditions and averaged over three hours, 0.05 grains;

36.3 Sulfur dioxide emissions, averaged over three hours, from petroleum refinery fuel-burning equipment may not exceed:

36.3.1 230 mg of hydrogen sulfide per dscm (162 ppm H_2S) for equipment burning only fuel gas;

36.3.2 500 ppm for fuel-burning equipment that does not burn fuel gas. The Permittee will ensure compliance by limiting the sulfur content of LAGO, LSR and #1 fuel oil to no greater than 0.5% by weight; and

36.3.3 A concentration based on the allowable emissions in Conditions 36.3.1 and 36.3.2, prorated by the proportion of fuel gas and other fuels to the total fuel burned in the equipment for fuel-burning equipment that burns a combination of fuel gas and other fuels.

37. Monitoring and recording:

37.1 Conduct visible emission readings on Source No. 1 no later than 30 days after startup and no less than once every month. If after 12 months the Permittee records no violation as set out in Condition 36.1 of this permit, the Permittee shall perform visible emission readings no less than once every 12-consecutive months.

37.2 Conduct particulate matter source tests on Source No. 1 upon Department request as set out in Condition 17.2;

37.3 To ensure compliance with sulfur compound emission standards in Condition 36.3:

37.3.1 For fuel oil, conduct monthly fuel sulfur tests using appropriate sulfur analysis test methods listed in the latest version of ASTM D396; and

37.3.2 For fuel gas, determine compliance using CEMS data as set out in Condition 19 and 33.4.1 of this permit, or any other appropriate methods as set out in Condition 33.4.1;

38. Reporting--The Permittee shall attach to the Facility Operating Report required under Condition 14 of the Permit to Operate No. 9531-AA006:

38.1 The sulfur content analysis of LAGO, LSR and #1 fuel oil. List the name of the supplier. Report any change in the type of fuel, test method, or analysis

performed.

38.2 NSPS Subpart J data for fuel gas monitoring as set out in Conditions 33.4 and 32.6 from the NSPS portion of this permit;

I. 18 AAC 50.110: Air Pollution Prohibited

39. The Permittee shall comply with 18 AAC 50.110, which states that no person may permit any emission which is injurious to human health or welfare, animal or plant life, or property, or would unreasonably interfere with the enjoyment of life or property. The Permittee shall:

39.1 Attach to the Facility Operating Report a written description of any public air pollution complaint, including the date, time, nature of complaint, and measures taken as required to resolve the complaint;

39.2 Take reasonable actions to address air pollution complaints resulting from emissions at the facility; and

39.3 Notify the Department in advance of any planned modification or replacement of the fuel burning equipment, which might result in increased potential air contaminant emissions. The notification must be in writing and must include a description of the proposed change, and an estimate of any change in the quantity of emissions of each regulated air contaminant that may occur as the result of the modification or replacement.

EXHIBIT A
Source Inventory

Permittee is authorized under this permit to operate only the following equipment. The design rating and capacity is set out in this Exhibit is only for the purpose of aiding in the field identification of the equipment. Permittee must notify the Department prior to installation of any new equipment of any size to determine the applicability of regulatory requirements.

Source	Source Description and Identification	Normal Fuel or Contents	Design Capacity	Maximum Fuel Rate
1	Cabin Type, pipestill direct fired furnace w/8 John Zinc PDA-16M Burners	Fuel Gas LAGO LSR	50 MMBtu/hr	16,357 scf/hr* 285 gal/hr 341 gal/hr
2	Stand-by Cat D348 Diesel Generator Set	#1 Fuel Oil	550 KW	47 gal/hr
3	Truck Loading Racks	Diesel and Jet A	Approximately 2,000,000 barrels per year	
4,5,6	Product Storage Tanks	Diesel and Jet A	7,500 barrels (total)	
7,8,9	Product Storage Tanks	Diesel and Jet A	30,000 barrels (total)	
10	Crude Oil tank	Crude Oil, Diesel and Jet A	10,000 barrels	
11	Crude Oil tank	Crude Oil	20,000 barrels	

* Primarily composed of Butane C_4H_{10}

EXHIBIT B
Air Contaminant Emission Limits, Standards, Fuel Specifications, and Operating Limits

Operations and Air Contaminants	Emission limits/Standards/ Fuel Specifications/ Operating Limits	Potential to Emit in tons/year
A. Particulate Matter	20% opacity not to be exceeded more than three minutes in any one hour	
Topping Plant/Crude Heater	Not to exceed 0.05 gr/dscf AP 42 Emission Factor 3.3 lb/1000 gal LSR - 71,123 bbls/yr and 0.6 lb/1000 gal fuel gas - 21,715 equiv. bbls/yr	5.2
Emergency Generator	Not to exceed 0.05 gr/dsf AP 42 Emission Factor 0.1 lb/MMBtu #1 fuel oil - 9,400 gal/yr	0.06
B. Sulfur Dioxide	500 ppm SO_2 three hour average for fuel oil and 230 mg/DSCM H_2S for fuel gas	
Topping Plant/Crude Heater	0.5 Sulfur by weight LAGO - 59,443 bbls/yr 230 mg/DSCM H_2S fuel gas - 21,669 bbls/yr	89.9
Emergency Generator	0.3% Sulfur by weight #1 fuel oil - 9,400 gal/yr	0.2
C. Oxides of Nitrogen		
Topping Plant/Crude Heater	AP 42 Emission Factor 21 lb/1000 gal fuel gas - 106,592 equiv. bbls/yr	47.0
Emergency generator	AP 42 Emission Factor 3.2 lb/MMBtu #1 fuel oil - 9,400 gal/yr	2.0
D. Carbon Monoxide		
Topping Plant/Crude Heater	AP 42 Emission Factor 5.0 lb/1000 gal LSR - 71,123 bbls/yr 3.6 lb/1000 gal fuel gas - 21,715 equiv. bbls/yr	9.7
Emergency generator	AP 42 Emission Factor 0.85 lb/MMBtu #1 fuel oil - 9,400 gal/yr	0.5
D. Volatile Organic Compounds		
Topping Plant/Crude Heater	AP 42 Emission Factor 0.6 lb/1000 gal fuel gas - 106,592 equiv. bbls/yr	1.3
Emergency generator	0.09 lb/MMBtu #1 Fuel Oil - 9,400 gak/yr	0.1
Truck Loading Racks	Jet A fuel - 2,000,000 bbls/yr	2.8
10,000 bbl Crude Tank	Turnover rate 6,619 bbls/yr - 7,300,000 bbls /yr	3.3
20,000 bbl Crude Tank	Turnover rate 5,434 bbls/yr - 7,300,000 bbls /yr	2.7
3 ea. 10,000 bbl Product Tank	Turnover rate 255 bbls/yr - 533,333 bbls/yr (each)	0.38
3 ea. 2,500 bbl Product Tank	Turnover rate 62 bbls/yr - 133,333 bbls/yr (each)	0.09

Note: Potential to Emit are based upon 8,760 hours per year of operation in Crude heater and 200 hours per year of operation of Emergency generator.

EXHIBIT C
Permit Documentation

August 23, 2001	Memorandum from Alan, Schuler ADEC, Petro Star North Pole Modeling Review.
August 09, 2001	E-mail from Mr. Ed Powell, CH_2M Hill, justification of using CARB data for estimating HAP.
July 26, 2001	E-mail from ADEC to Mr. Ed Powell, CH_2M Hill requesting North Slope Crude oil composition
July 23, 2001	Fax from Mr. Ed Powell, CH_2M Hill, submitting CARB Speciation Manual.
April 20, 2001	Construction Permit application submitted to ADEC from Petro Star North Pole Refinery.
November 29, 1995	Air Quality Control Permit to Operate, Permit # 6531-AA006.
November 29, 1995	Transmittal letter from ADEC to Mr. Chapados, Petro Star Inc.

EXHIBIT D
Excess Emission Form

Company Name: _____ Facility Name: _____

NOTE: Attach Additional Sheets If Necessary

Event Information:

Duration

Date: _____ Start Time (Military Time) _____ End Time _____ (hr:min) ____:____

Date: _____ Start Time (Military Time) _____ End Time _____ (hr:min) ____:____

Total ____:____

Cause of Event (Check all that apply):

❑ Start Up ❑ Upset Condition ❑ Control Equipment Failure
❑ Shut Down ❑ Scheduled Maintenance ❑ Other _____

Details: Describe in detail what happened. Attach additional sheets if necessary.

Sources Involved: Identify each emission source involved by name and ID number as it appears in the permit. List any control device or monitoring system affected by the event.

Source ID:	**Description:**
_____	_____
_____	_____

Emission Standard Exceeded: Identify each emission standard and permit condition exceeded during the event. Also describe the extent to which each standard or condition was exceeded. List any known or suspected injuries or health impacts.

Standard or Condition	**Limit**	**Exceedance**

Emission Reduction: Describe the steps taken to reduce emissions during the event.

Corrective Actions: Describe actions taken to restore the system to normal operation.
Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.

Printed Name: _____ Signature: _____

Phone Number: _____ Date: ____/____/____